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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,617	03/18/2004	Nobuo Masuoka	16869S-111300US	7872

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EXAMINER

KOVAL, MELISSA J

ART UNIT PAPER NUMBER

2851

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/804,617

Applicant(s)

MASUOKA ET AL.

Examiner

Melissa J. Koval

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>March 18, 2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, 8 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al. U.S. Patent 5,506,642.

See Figure 4, for example.

Claim 1 sets forth: "A back reflective mirror (See mirror 22.) which is used in a back projection type video display device projecting an optical image from a back side a screen response to video signal by a projection unit and which changes an optical path of a projected video light from projection unit screen direction, the mirror comprising (See Figure 1.):

a glass substrate (Sheet 34 can be plastic or glass, see column 8, lines 9 and 22.);

a reflective film silver or a silver alloy forming a reflective surface on the glass substrate (See column 6, lines 45 through 59.);

and

a topcoat film formed of a transparent resin on the reflective film (See protective film 36 of chromoxide or PMMA.)."

Claim 3 is rejected for the same reasons.

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With respect to claim 4, now also refer to Figure 2.

Claim 4 sets forth: "A back reflective mirror which is used in a back projection type video display device including a red projection tube, a green projection tube, and a blue projection tube for projecting optical images in response to red, green, and blue video signals to project the optical images from a back side of a screen by the respective projection tubes and which changes optical paths of projected video lights from the projection tubes in a screen direction, the mirror comprising (See projection unit 12 and column 6 lines 11 through 30. Suzuki et al. '642 clearly teach a three color system. The tubes referred to by applicant are notoriously well known, because of this, and because the claims are directed to the structure of a mirror, the examiner does not give the patentable significance to the term "tube".) :

a glass substrate (Sheet 34 can be plastic or glass, see column 8, lines 9 and 22.);

a reflective film of silver or a silver alloy forming a reflective surface on the glass substrate (See column 6, lines 45 through 59.);
and

a topcoat film formed of transparent resin on the reflective film (See protective film 36 of chromoxide or PMMA),

wherein a film thickness of the topcoat film set based on a refractive index of the topcoat film (See the SUMMARY OF THE INVENTION, Figure 10, column 8, lines 27 through 37, for example.)."

Claim 8, and 12 through 14 are rejected for the same reasons already applied above.

Allowable Subject Matter

Claims 2, 5-7, 9, and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record neither shows nor suggests all of the elements of claim 2 in combination, and each and every limitation of claim 2 is required to render it allowable over the prior art of record, particularly: "wherein the topcoat film has a film thickness of 1 μm or less."

Furthermore with respect to claim 2. Applicant's specification on page 9 teaches the following critical results directed to the thickness of the topcoat:

"Furthermore, a film thickness of the topcoat is set to 1 μm or less and to be small so that a contrast or resolution performance substantially equal to that of a general glass mirror is obtained.

Furthermore, the topcoat film thickness is set to such an extent that a wavelength of a crest of a ripple caused by interference by a thin film is substantially equal to a green luminescent line wavelength of a projected video light projected from the projection unit or a light source built in the projection unit."

The prior art of record neither shows nor suggests all of the elements of claim 5, in combination, and particularly:

“the wavelength of any crest of the ripple shape indicated by the reflectance characteristic agrees with that of a luminescent line of light emitted from the green projection tube.”

Claim 7 is allowable for the same reasons applied to claim 5 with respect to the color red.

Claim 9 is allowable for the same reasons applied to claim 5.

Claim 11 is allowable for the same reasons applied to claim 5 with respect to the color yellow.

The prior art of record neither shows nor suggests all of the elements of claim 6, in combination, and particularly:

“wherein assuming that the refractive index of the topcoat film is n , the film thickness the topcoat film satisfies a condition of $0.626/n + \text{or} - 0.02 \mu\text{m}$.”

Applicant's specification on page 16, sets forth the following:

“However, when the refractive index of the topcoat resin is set to n , and the film thickness is determined in accordance with the following equation 1, the wavelength of the crest of the ripple can be substantially matched with luminescent line 543 nm of the video projection tube for green 22.

$$0.626/n + \text{or} - 0.02 [\mu\text{m}] \quad \dots(\text{Equation 1})$$

The above equation is derived by use software for simulation of optical film software "FILM*STAR" of U.S. Software Associates Co. In the present embodiment, the wavelength of the crest of the ripple matched with the luminescent line 543 nm of the video projection tube for green 22. However, an absolute amount of red is smaller than that of green. Therefore, consideration of white balance, the wavelength may also be matched with the luminescent line 610 nm of the video projection tube blue 23."

The prior art of record neither shows nor suggests all of the elements of claim 10 in combination and particularly:

"wherein assuming that the refractive index of the topcoat film is n , the film thickness of the topcoat film satisfies the condition of $0.635/n \pm 0.02 \mu\text{m}$."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamashita et al. U.S. Patent 6,264,341 B1 teaches a reflecting mirror and film television receiver.

Ishii et al. U.S. Patent 6,565,222 B1 teaches a high performance, low cost mirror for a rear projection television.

Adachi et al. U.S. Patent 6,650,472 B1 teaches a luminous intensity distribution control device and display having the same.

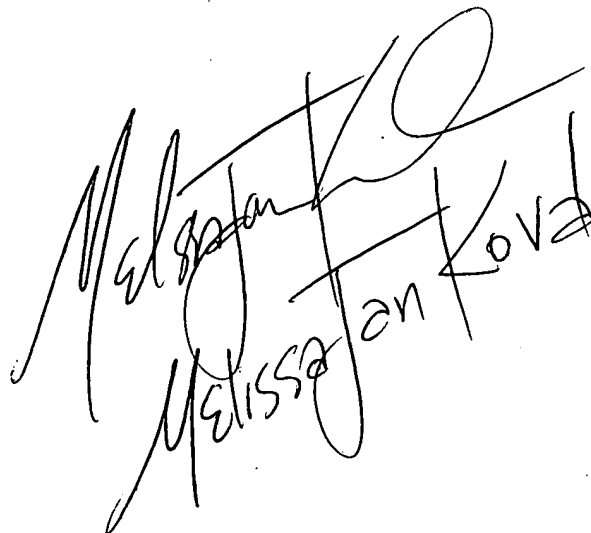
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa J. Koval whose telephone number is (571) 272-2121. The examiner can normally be reached on Monday through Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJK



Handwritten signature of Melissa Kovach, with the name "Melissa Kovach" written below it.